



## Commonwealth Oil And Refining Company Incorporated (CORCO)

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EPA ID Number: PRD091017228

### Other (Former) Names of Site

None

### Site Description

The Commonwealth Oil and Refining Company, Inc. (CORCO) facility is located on the south coast of Puerto Rico, on State Road 127 in the Municipio (town) de Peñuelas, approximately 7 miles west of the city of Ponce. The facility was formerly a large petroleum refinery and part of a petrochemical manufacturing complex. The northern part of the 800-acre site, which contains most of the facility's numerous storage tanks, is hilly. The southern part, which borders the Caribbean Sea, consists of filled land that is flat. This flat area contains the former hazardous waste treatment units. The facility is adjacent to a number of mostly non-operating chemical and petroleum refining facilities. During many of the years of its operation as a refinery, CORCO was involved in joint business ventures with a variety of these facilities. Since 1982, CORCO has been inactive as a refinery and now functions as a terminal for the marine transportation and land-based storage of crude oil and petroleum products. The remaining regional land use is residential and agricultural.

### Site Responsibility

Cleanup at this site is being addressed by the U.S. Environmental Protection Agency (EPA), under authority of the of the Resource Conservation and Recovery Act (RCRA).

### Threats and Contaminants

The major threat is the result of the unintended release of petroleum and petroleum products into the soil beneath the facility and to the groundwater within that soil. A subsurface plume of petroleum (the undissolved phase) floats on top of the regional groundwater and is also partially dissolved within the groundwater (the dissolved phase). Because of its relatively high salt content, the groundwater is not used for drinking. The subsurface plume of petroleum and its dissolved phase does however represent a potential threat to the surface water of the Caribbean Sea and to its nearshore ecosystem. In addition, some groundwater is reportedly used for agriculture

and other purposes from unregistered private wells. Contaminants of concern within the petroleum are: benzene, toluene, ethyl benzene, and xylene.

During the facility's active life as a refinery, it operated seven solid waste management units for the treatment, storage, and disposal of hazardous waste. These units consist of five surface impoundments (lagoons), that were part of the facility's wastewater treatment plant, and two tanks that were used to store contaminated oil. These units have lost their interim permits to manage hazardous waste. CORCO is required to investigate hazardous waste remaining in these units, determine whether there has been any release of hazardous waste constituents to the environment, and close these units by insuring that the environment is adequately protected from exposure to any of their hazardous constituents. These units contain the following additional hazardous constituents: fluorene, pyrene, hexachlorodibenzodioxin, arsenic, barium, cadmium, chromium, nickel and zinc.

## **CLEANUP APPROACH**

### **Cleanup Status/Corrective Action**

The site is being addressed by CORCO, under EPA oversight, in two phases: Interim Corrective Measures and long-term corrective measures directed at cleanup of the entire site.

### **Response Action Status**

#### *Interim Corrective Measures*

Since 1994, recovery of sub-surface petroleum has been conducted under an effort termed the "MIS Area Product Recovery System." The purpose of the effort is to contain the petroleum's further migration. It is estimated that over 3.3 million gallons of petroleum have been recovered as a result of the active pumping of recovery wells, and that this has served to contain the subsurface petroleum on the facility's property.

#### *Entire Site*

The extent of subsurface petroleum migration is being monitored by a series of 44 wells. The goal of the remediation plan for this subsurface petroleum is to further determine the extent of additional detected subsurface petroleum, remove the undissolved phase from the soil so that it will no longer serve as a source of contamination to the groundwater, and remove the dissolved phase from the site's groundwater. This will be done through the active pumping of the undissolved phase, and the pumping and treating of the dissolved phase.

In addition, groundwater monitoring has been conducted at the seven units formerly used for the treatment, storage, and disposal of hazardous waste. The wastes were managed in these units as part of routine refinery operations. The units consist of five surface impoundments (lagoons) that were part of the facility's wastewater treatment plant, and two tanks that were used to store contaminated oil.

CORCO has previously proposed the removal and treatment of residual sludge and contaminated soil from one of the surface impoundments, the Eastern Oil Lagoon, and the removal and treatment of oily sludge stored in the two tanks. Most of the oily components of the sludges were proposed to be physically separated from the solid portion. The remaining material would be subject to biological degradation within a separate land treatment unit (essentially a tilled open field within an industrial setting).

The wastewater associated with the treatment process would ultimately either be recycled within the system, or discharged to marine waters after being treated as per permit requirements regulated by the National Pollution Discharge Elimination System (NPDES). The soil medium remaining after treatment, which would be anticipated to contain small amounts of residual hazardous constituents, would be chemically and physically stabilized and disposed in an on-site landfill. These treatment activities would occur within what is termed a Corrective Action Management Unit (CAMU). The feasibility of this proposal has been confirmed in a series of Corrective Measure Studies.

The residual sludge and sediment within the other four surface impoundments, which have been determined not to be a potential source of groundwater contamination, would be physically and chemically stabilized, would remain in-place, and would serve as the foundation for the components of the CAMU.

Since May 2000, CORCO has formally proposed a substantially revised cleanup effort. This revised effort, which has been initially determined not to meet the regulatory requirements of the RCRA program, is being further evaluated by EPA.

### **Cleanup Progress**

It is estimated that 3.3 million gallons of petroleum have been recovered through the active pumping of recovery wells. This has served to contain the subsurface petroleum on the facility's property. The plan for site-wide corrective action for the subsurface petroleum has been technically approved but has not been implemented. The plans for closure of the Eastern Oil Lagoon, which includes a corrective action component, has been technically approved but not implemented. These two activities are part of the substantially revised clean up effort that CORCO is now proposing.

### **Permit Status**

CORCO has lost its interim permit to operate the seven regulated units for the management of hazardous waste. The closure of these units, as well as the associated

corrective action activities, had been enfolded into a permit application for the operation of three new hazardous waste management units. These units were proposed in order to manage hazardous waste that would be generated in the future as part of CORCO's proposed routine operations. The permit application is substantively complete. However, in CORCO's revised proposal, which significantly revises the activities associated with both the closure of the seven regulated units and corrective action, the activities requiring the need for a permit are no longer included.

### **Site Repository**

Copies of supporting technical documents and correspondence cited in the fact sheet are available for public review at the following location:

U.S. Environmental Protection Agency, Region 2  
RCRA Records Center  
290 Broadway, 15th Floor, Room 1538  
New York, New York 10007-1866  
Telephone: (212) 637-3043